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ON-TIME PERFORMANCE OF SHIPMENTS
THROUGH THE LOS ANGELES REGIONAL
FREIGHT CONSOLIDATION CENTER

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August 1991

OPERATIONS RESEARCH AND ECONOMIC ANALYSIS OFFICE

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DEPARTMENT OF DEFENSE
DEFENSE LOGISTICS AGENCY

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August 1991

Mark Kleinhenz

**DEPARTMENT OF DEFENSE
DEFENSE LOGISTICS AGENCY
OPERATIONS RESEARCH AND ECONOMIC ANALYSIS OFFICE
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FOREWORD

The On-Time Performance of Shipments Through The Los Angeles Regional Freight Consolidation Center study is an analysis of service to customers after implementation of the Regional Freight Consolidation Program. The Los Angeles Regional Freight Consolidation Center (RFCC) is one freight pooling hub in the Regional Freight Consolidation Program, formerly known as the Enhanced DLA Distribution System.

Results show that the Uniform Military Materials Issue Priority System (UMMIPS) standard of 95 percent on-time delivery (i.e. within 21 days) is not being met. Customers are receiving only 80 percent of their freight on time. The policy of the Regional Freight Consolidation Center Program Office is: depots have a maximum of 14 days to deliver shipments to the RFCC and the RFCC has a maximum of 7 days for pooling and delivery to the customer. The six primary DLA depots are not delivering 95 percent of their shipments to the RFCC within 14 days. However, the RFCC is delivering 98.9 percent of its pooled shipments to the customer within 7 days.

It was recommended that the depots make additional efforts to reduce handling times for shipments to the Los Angeles RFCC if the UMMIPS service standard of 95 percent delivery within 21 days is to be satisfied.

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1. **INTRODUCTION.** The Defense Logistics Agency's (DLA) Operations Research and Economic Analysis Management Support Office was tasked by the DLA Directorate of Supply Operations, Transportation Division, to provide an analysis of the effect on customer service of the Regional Freight Consolidation Program (RFCP), formerly known as the Enhanced DLA Distribution System (EDDS), for customers served by the Los Angeles Regional Freight Consolidation Center (RFCC). The Regional Freight Consolidation Center Program Office (RFCCPO) oversees the management of the RFCCs.

A. Background.

One outcome of Defense Management Review Decision (DMRD) 915, a Department of Defense directive concerned with reducing transportation costs, was that the EDDS mission was expanded to establish a network of Department of Defense regional freight consolidation centers. The Military Services can route their EDDS-eligible shipments to these centers for "pooling" with freight from the DLA depots so that fewer, larger less-than-truckload shipments can be built for delivery to the ultimate customer. This expanded version of EDDS is called the "Regional Freight Consolidation Program." The principal purpose of the RFCP is to reduce transportation costs while simultaneously maintaining the required level of customer service.

Although cost savings is very important, the primary goal of logistics at DLA is service to the customer. Therefore, information is required to determine whether DLA is continuing to achieve its service goal after the implementation of the RFCP. Using this information, DLA management can determine what corrective action, if any, is required.

B. Problem Statement. What is the impact of the implementation of the RFCP on service to customers in the Los Angeles RFCC region?

C. Objectives. Use time, in days, to measure customer service and determine the on-time percentage of shipments to the Los Angeles RFCC region. Compute results by: Military Service, customer (grouped by 4-digit Standard Point Location Code (SPLC)), and by DLA depot.

D. Scope.

1. The RFCC data will consist of all shipment data contained on the RFCC tapes for traffic originating at one of the DLA depots and received at the Los Angeles RFCC.

2. Data will cover the time frame of October through December 1990.

E. Assumptions.

1. Shipment performance results will be based on a Transportation Control Number (TCN) basis.

2. TCN order-ship-time is an appropriate measure of service to the customer.

3. The transceive date of the TCN will be taken to be the average of the transceive dates of the material release orders on that TCN. Using the minimum transceive date would tend to over-estimate customer service time and using the maximum transceive date would tend to under-estimate customer service time.

II. METHODOLOGY.

A. Creation of Database.

Time data pulled from the Material Release Order (MRO) file included the following fields: date transceived (the date the shipment entered the Mechanization of Warehousing and Shipment Processing history file - MOWASP), drop date (the date the shipment was dropped from MOWASP), date offered (the date the shipment arrived in the transportation office), the date shipped (the date the carrier picked up the shipment), and the TK4 date (the date the shipment was delivered to the RFCC). The date transceived marks the date the requisition is received by the depot. Since the RFCC program affects only the operation of the depots, the order-ship-time study begins with the date transceived. This time data was attached to records supplied by the RFCC operator, which contain time data relevant to computing handling times at the RFCC.

B. Computation of Order-Ship-Times.

1. The data were aggregated by TCN for the purpose of computing handling times. For each TCN the following handling times were computed: bank time, depot pick time, hold time, transit time to RFCC, hold time at RFCC, transit time to customer, and RFCC time. If the TK4 date was not available for computing the transit time to the RFCC, the receipt date recorded at the RFCC was substituted. Finally an overall delivery time beginning with the transceive date and ending with the delivery date to the customer was computed. Each of these handling times was calculated in the following way:

Bank time	= Drop date - Average transceive date
Pick(& Pack) time	= Date offered - Date dropped
Hold time @ depot	= Date shipped from depot - Date offered
Transit time to RFCC	= TK4 date - Date shipped from depot
Hold time @ RFCC	= Date shipped from RFCC - Date received by RFCC
Transit time to customer	= Date delivered - Date shipped from RFCC
RFCC time	= Date delivered - Date received by RFCC
Delivery time	= Date delivered to customer - Average transceive date

Records were eliminated when any of the computed handling times appeared to be the result of incorrectly recorded data. Therefore records were eliminated whenever any of the following conditions were satisfied: any piece of data information was missing, the computation resulted in a negative handling time, the transit time to the RFCC from the depots east of the Mississippi was less than 3 days or greater than 30 days, the delivery time from depots east of the Mississippi was less than 7 days or greater than 30 days, the transit time to the RFCC from depots west of the Mississippi was less than 1 day or greater than 30 days, or the delivery time for the western depots was either less than 4 days or greater than 30 days.

III. ANALYSIS.

A. Results.

Table 1 shows the overall on-time performance for TCNs originating at the six DLA depots going to customers in the area serviced by the Los Angeles RFCC. The results show that of the 20,000 TCNs delivered during the October - December period 80.0 percent arrived in 21 days or less. The remainder exceeded 21 days.

Table 1

OVERALL ON-TIME PERFORMANCE TO CUSTOMER IN DAYS
OCTOBER THROUGH DECEMBER 1990

DAYS	FREQUENCY	PERCENT	CUMULATIVE	CUMULATIVE
			FREQUENCY	PERCENT
7	55	0.3	55	0.3
8	162	0.8	217	1.1
9	318	1.6	535	2.7
10	525	2.6	1060	5.3
11	666	3.3	1726	8.6
12	990	4.9	2716	13.6
13	1587	7.9	4303	21.5
14	1784	8.4	6087	30.4
15	1422	7.1	7509	37.5
16	1356	6.8	8865	44.3
17	1439	7.2	10304	51.5
18	1418	7.1	11722	58.6
19	1528	7.6	13250	66.2
20	1438	7.2	14688	73.4
<u>21</u>	<u>1311</u>	<u>6.6</u>	<u>15999</u>	<u>80.0</u>
22	771	3.9	16770	83.8
23	603	3.0	17373	86.9
24	631	3.2	18004	90.0
25	570	2.8	18574	92.9
26	442	2.2	19016	95.1
27	403	2.0	19419	97.1
28	268	1.3	19687	98.4
29	191	1.0	19878	99.4
30	122	0.6	20000	100.0

The policy of the RFCCPO is to require the DLA depots to deliver shipments to the RFCC within 14 days of the transceive date and to allocate the remaining 7 days of the Uniform Military Materials Issue Priority System (UMMIPS) 21-day time frame to the RFCC for pooling and delivery to the ultimate customer. The next sections examine the performance of the RFCC and DLA depots in meeting their respective on-time standards.

B. RFCC Performance.

Table 2 presents the on-time performance (date delivered to customer - date received at RFCC) of the Los Angeles RFCC for its 7-day service requirement. Results show that 98.9 percent of the TCNs were delivered to the customer within the assigned 7-day time frame. Tables 3 and 4 break down this overall on-time performance into hold time at the RFCC and transit time from the RFCC to the customer.

Table 2

ON-TIME PERFORMANCE BY LOS ANGELES RFCC

DAYS	FREQUENCY	PERCENT	CUMULATIVE	CUMULATIVE
			FREQUENCY	PERCENT
0	212	1.1	212	1.1
1	3374	16.9	3586	17.9
2	3161	15.8	6747	33.7
3	2648	13.2	9395	47.0
4	2834	14.2	12229	61.1
5	2437	12.2	14666	73.3
6	3172	15.9	17838	89.2
7	1947	9.7	19785	98.9
8	179	0.9	19964	99.8
> 8	36	0.2	20000	100.0

Table 3 is a frequency table for the length of time TCNs were held at the RFCC for consolidation. The maximum feasible hold time in order to meet the 7-day standard is believed to be 4 days; 18.5 percent of the TCNs were held at the RFCC for more than 4 days. Table 4 is the frequency table for the transit times from the RFCC to customers in the Los Angeles region. The results show that 91.8 percent of all TCNs had transit times within 3 days and that 96.1 percent had transit times within 4 days.

Table 3

HOLD TIME PERFORMANCE BY LOS ANGELES RFCC

DAY	FREQUENCY	CUMULATIVE PERCENT	FREQUENCY	CUMULATIVE PERCENT
0	5503	27.5	5503	27.5
1	4050	20.3	9553	47.8
2	2370	11.8	11923	59.6
3	2430	12.1	14353	71.8
4	1952	9.8	16305	81.5
5	1786	8.9	18091	90.5
6	1652	8.3	19743	98.7
7	236	1.2	19979	99.9
8	9	0.0	19988	99.9
9	3	0.0	19993	100.0
10	7	0.0	20000	100.0

Table 4

TRANSIT TIME TO CUSTOMER PERFORMANCE BY LOS ANGELES RFCC

DAY	FREQUENCY	CUMULATIVE PERCENT	FREQUENCY	CUMULATIVE PERCENT
0	1526	7.6	1526	7.6
1	12271	61.4	13797	69.0
2	2555	12.8	16352	81.8
3	2016	10.1	18368	91.8
4	858	4.3	19226	96.1
5	494	2.5	19720	98.6
6	265	1.3	19985	99.9
7	8	0.0	19993	100.0
8	4	0.0	19997	100.0
10	1	0.0	19998	100.0
12	2	0.0	20000	100.0

C. Depot Performance.

The overall on-time performance of TCNs delivered to customers depends on the TCNs timely arrival at the RFCC site. Table 5 presents the performance of the depots in delivering RFCC-eligible freight to the Los Angeles RFCC within the 14-day standard portion of the UMMIPS requirement. Inspection of the table indicates that none of the depots is meeting the 14-day requirement 95 percent of the time. Defense Depot Ogden, UT (DDOU) and Defense Depot Tracy, CA (DDTC) have on-time percentages exceeding 80 percent; all depots east of the Mississippi have on-time percentages that are considerably less. Additional depot abbreviations used in the following tables are: Defense Depot Columbus, OH (DDCO), Defense Depot Mechanicsburg, PA (DDMP), Defense Depot Memphis, TN (DDMT), and Defense Depot Richmond, VA (DDRV).

Table 5

ON-TIME PERFORMANCE TO LOS ANGELES RFCC
BY DEPOT

DEPOT	NBR TCNs	PERCENT ON-TIME
DDCO	276	69.2
DDMP	1068	42.5
DDMT	2557	67.3
DDOU	8321	83.6
DDRV	1788	41.1
DDTC	5788	81.2

The next question to ask is what must be done to ensure an on-time performance of 95 percent delivery to the RFCC within 14 days. Managerial action has already been taken in an attempt to reduce transit time. During the fourth quarter of Fiscal Year 1990 "Round Robins" were started at each of the following depots: DDMT, DDMP and DDRV. Once a week a truck arrives from the Los Angeles RFCC and drops off vendor freight at the depot; then the truck is loaded with shipments to customers in the RFCC's area. There is a fixed cost for each trip. Since the "Round Robin" is a direct haul employing dual drivers, transit time should be reduced. Presently, DDCO is not included in the "Round Robin" program.

For the depots east of the Mississippi River shipping to the Los Angeles RFCC results show the performance standard of 95 percent delivery within 14 days has not been achieved even after implementation of the "Round Robin". One reason for this result is that the "Round Robin" is a once-a-week service; some of the depots have enough freight for two or more truckloads per week. Therefore the additional freight bound for customers in the Los Angeles RFCC region is given to the Guaranteed Traffic carrier. The transit time requirements for the GT carrier are not as stringent as the time requirement for the "Round Robin" service. Another reason is that the overall handling time at the depots is greater than the allowable handling time required to meet the 95 percent delivery within 14 days requirement. This result is shown using tables 6 and 7.

Table 6 is presented to give a "feel" for the total amount of time that a shipment may remain in the depot before it must be picked up by the carrier for movement to the Los Angeles RFCC. The required transit days are based on the transit time requirements specified in the Guaranteed Traffic truckload agreements. The GTF LTL required transit times are generally longer. Table 6 shows that the depots in the eastern part of the nation have as little as 7 or 8 days from the transceive date to the ship date in which to prepare freight for transport to the Los Angeles RFCC.

Table 7 shows how many of the TCNs that are going to customers in the Los Angeles RFCC region leave the depot on time in order to arrive at the RFCC within 14 days of entering the bank. The number of days in the depot is determined by subtracting the average transceive date for the TCN from its shipdate. For example, Table 7 indicates that 88.8 percent of the TCNs at DDCO were: banked, dropped, picked/packed, offered and shipped out of the depot within the 8 days shown to be the maximum allowable time in Table 6. At DDMP, the data shows that only 33.0 percent had handling times within that depot's maximum allowable processing time of 7 days.

Table 6

MAXIMUM ALLOWABLE HANDLING TIME FOR FREIGHT
GOING TO THE LOS ANGELES RFCC

DEPOT	REQUIRED TRANSIT DAYS TO LA RFCC	MAXIMUM DAYS IN DEPOT	TOTAL DAYS
DDCO	6	8	14
DDMP	7	7	14
DDMT	6	8	14
DDOU	4	10	14
DDRV	7	7	14
DDTC	2	12	14

Table 7

PERCENTAGE OF TCNS HAVING TOTAL HANDLING TIMES
WITHIN THE MAXIMUM ALLOWABLE HANDLING TIME

DEPOT	MAXIMUM DAYS IN DEPOT	PERCENT
DDCO	8	88.8
DDMP	7	33.0
DDMT	8	57.1
DDOU	10	79.9
DDRV	7	36.9
DDTC	12	86.6

Detail on current handling times at each of the depots is contained in the appendices. Appendices A through F contain frequency tables by depot for the following: performance time (TK4 date - average transceive date), bank time, pick time, hold time, and transit time to the RFCC. Appendix G contains results of on-time performance by Military Service. Appendix H contains on-time performance results by customer as defined by 4-digit SPLC. The SPLC is used by both private industry and government to identify customer location. The first two digits represent the state and the second two digits identify the county. Table H-2 lists the SPLCs with the state and county each represents.

IV. CONCLUSIONS AND RECOMMENDATIONS.

A. Conclusions.

- o The UMMIPS customer service requirement of 95 percent on-time delivery within 21 days is not being satisfied.
- o The 6 DLA depots are not achieving 95 percent on-time delivery within their 14-day time frame.
- o The Los Angeles RFCC is achieving 95 percent on-time delivery within its 7-day time frame.

B. Recommendations.

- o The 6 DLA depots must make additional efforts to manage their respective bank, pick, hold and transit times to ensure 95 percent on-time delivery of freight to the RFCC.

APPENDIX A

Handling Times For Freight To Los Angeles RFCC
At Depot DDCO

Table A-1

PERFORMANCE TIMES FOR TRAFFIC TO LA RFCC FROM DDCO

DAY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
9	2	0.7	2	0.7
10	15	5.4	17	6.2
11	34	12.3	51	18.5
12	57	20.7	108	39.1
13	48	17.4	156	56.5
<u>14</u>	<u>35</u>	<u>12.7</u>	<u>191</u>	<u>69.2</u>
15	25	9.1	216	78.3
16	10	3.6	226	81.9
17	10	3.6	236	85.5
18	7	2.5	243	88.0
19	11	4.0	254	92.0
20	5	1.8	259	93.8
21	1	0.4	260	94.2
22	5	1.8	265	96.0
24	3	1.1	268	97.1
25	3	1.1	271	98.2
26	3	1.1	274	99.3
27	1	0.4	275	99.6
28	1	0.4	276	100.0

Table A-2

BANK TIMES FOR TRAFFIC TO LA RFCC FROM DDCO

BANK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	5	1.8	5	1.8
1	99	35.9	104	37.7
2	34	12.3	138	50.0
3	49	17.8	187	67.8
4	46	16.7	233	84.4
5	34	12.3	267	96.7
6	7	2.5	274	99.3
7	2	0.7	276	100.0

Table A-3

PICK TIMES FOR TRAFFIC TO LA RFCC FROM DDCO

PICK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	77	27.9	77	27.9
1	124	44.9	201	72.8
2	28	10.1	229	83.0
3	15	5.4	244	88.4
4	17	6.2	261	94.6
5	9	3.3	270	97.8
6	3	1.1	273	98.9
7	1	0.4	274	99.3
8	1	0.4	275	99.6
11	1	0.4	276	100.0

Table A-4

HOLD TIMES FOR TRAFFIC TO LA RFCC FROM DDCO

HOLD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
1	171	62.0	171	62.0
2	53	19.2	224	81.2
3	29	10.5	253	91.7
4	13	4.7	266	96.4
5	8	2.9	274	99.3
6	2	0.7	276	100.0

Table A-5

TRANSIT TIMES FOR TRAFFIC TO LA RFCC FROM DDCO

TRANSIT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
6	42	15.2	42	15.2
7	24	8.7	66	23.9
8	177	64.1	243	88.0
9	11	4.0	254	92.0
12	1	0.4	255	92.4
13	4	1.4	259	93.8
14	4	1.4	263	95.3
17	1	0.4	264	95.7
20	7	2.5	271	98.2
21	5	1.8	276	100.0

APPENDIX B

Handling Times For Freight To Los Angeles RFCC
At Depot DDMR

Table B-1
PERFORMANCE TIMES FOR TRAFFIC TO LA RFCC FROM DDMP

DAY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
7	6	0.6	6	0.6
8	24	2.2	30	2.8
9	13	1.2	43	4.0
10	53	5.0	96	9.0
11	97	9.1	193	18.1
12	104	9.7	297	27.8
13	91	8.5	388	36.3
14	66	6.2	454	42.5
15	50	4.7	504	47.2
16	52	4.9	556	52.1
17	54	5.1	610	57.1
18	77	7.2	687	64.3
19	64	6.0	751	70.3
20	80	7.5	831	77.8
21	76	7.1	907	84.9
22	48	4.5	955	89.4
23	44	4.1	999	93.5
24	17	1.6	1016	95.1
25	13	1.2	1029	96.3
26	6	0.6	1035	96.9
27	15	1.4	1050	98.3
28	11	1.0	1061	99.3
29	5	0.5	1066	99.8
30	2	0.2	1068	100.0

Table B-2
BANK TIMES FOR TRAFFIC TO LA RFCC FROM DDMP

BANK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	9	0.8	9	0.8
1	55	5.1	64	6.0
2	139	13.0	203	19.0
3	239	22.4	442	41.4
4	232	21.7	674	63.1
5	168	15.7	842	78.8
6	129	12.1	971	90.9
7	53	5.0	1024	95.9
8	17	1.6	1041	97.5
9	5	0.5	1046	97.9
10	4	0.4	1050	98.3
11	5	0.5	1055	98.8
12	5	0.5	1060	99.3
>12	8	0.7	1068	100.0

Table B-3

PICK TIMES FOR TRAFFIC TO LA RFCC FROM DDMP

PICK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	391	36.6	391	36.6
1	327	30.6	718	67.2
2	130	12.2	848	79.4
3	74	6.9	922	86.3
4	25	2.3	947	88.7
5	19	1.8	966	90.4
6	17	1.6	983	92.0
7	18	1.7	1001	93.7
8	25	2.3	1026	96.1
> 8	42	3.9	1068	100.0

Table B-4

HOLD TIMES FOR TRAFFIC TO LA RFCC FROM DDMP

HOLD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	13	1.2	13	1.2
1	119	11.1	132	12.4
2	298	27.9	430	40.3
3	185	17.3	615	57.6
4	11	1.0	626	58.6
5	27	2.5	653	61.1
6	73	6.8	726	68.0
7	77	7.2	803	75.2
8	104	9.7	907	84.9
9	99	9.3	1006	94.2
10	33	3.1	1039	97.3
>10	29	2.7	1068	100.0

Table B-5

TRANSIT TIMES FOR TRAFFIC TO LA RFCC FROM DDMP

TRANSIT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
3	118	11.0	118	11.0
4	80	7.5	198	18.5
5	231	21.6	429	40.2
6	327	30.6	756	70.8
7	47	4.4	803	75.2
8	212	19.9	1015	95.0
9	51	4.8	1066	99.8
>9	2	0.2	1068	100.0

APPENDIX C

Handling Times For Freight To Los Angeles RFCC
At Depot DDMT

Table C-1

PERFORMANCE TIMES FOR TRAFFIC TO LA RFCC FROM DDMT

DAY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
7	21	0.8	21	0.8
8	46	1.8	67	2.6
9	118	4.6	185	7.2
10	278	10.9	463	18.1
11	257	10.1	720	28.2
12	363	14.2	1083	42.4
13	370	14.5	1453	56.8
14	269	10.5	1722	67.3
15	171	6.7	1893	74.0
16	140	5.5	2033	79.5
17	157	6.1	2190	85.6
18	109	4.3	2299	89.9
19	75	2.9	2374	92.8
20	51	2.0	2425	94.8
21	41	1.6	2466	96.4
22	34	1.3	2500	97.8
23	32	1.3	2532	99.0
24	11	0.4	2543	99.5
25	5	0.2	2548	99.6
26	8	0.3	2556	100.0
27	1	0.0	2557	100.0

Table C-2

BANK TIMES FOR TRAFFIC TO LA RFCC FROM DDMT

BANK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	182	7.1	182	7.1
1	883	34.5	1065	41.7
2	658	25.7	1723	67.4
3	476	14.7	2099	82.1
4	280	11.0	2379	93.0
5	77	3.0	2456	96.1
6	66	2.6	2522	98.6
7	32	1.3	2554	99.9
8	2	0.1	2556	100.0
10	1	0.0	2557	100.0

Table C-3

PICK TIMES FOR TRAFFIC TO LA RFCC FROM DDMT

PICK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	244	9.5	244	9.5
1	709	27.7	953	37.3
2	657	25.7	1610	63.0
3	410	16.0	2020	79.0
4	252	9.9	2272	88.9
5	118	4.6	2390	93.5
6	89	3.5	2479	96.9
7	27	1.1	2506	98.0
8	30	1.2	2536	99.2
9	5	0.2	2541	99.4
> 9	16	0.6	2557	100.0

Table C-4

HOLD TIMES FOR TRAFFIC TO LA RFCC FROM DDMT

HOLD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	28	1.1	28	1.1
1	259	10.1	287	11.2
2	490	19.2	777	30.4
3	494	19.3	1271	49.7
4	345	13.5	1616	63.2
5	350	13.7	1966	76.9
6	270	10.6	2236	87.4
7	158	6.2	2394	93.6
8	81	3.2	2475	96.8
9	29	1.1	2504	97.9
10	22	0.9	2526	98.8
> 10	31	1.2	2557	100.0

Table C-5

TRANSIT TIMES FOR TRAFFIC TO LA RFCC FROM DDMT

TRANSIT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
4	1355	53.0	1355	53.0
5	539	21.1	1894	74.1
6	190	7.4	2084	81.5
7	255	10.0	2339	91.5
8	127	5.0	2466	96.4
> 8	101	3.6	2557	100.0

APPENDIX D

Handling Times For Freight To Los Angeles RFCC
At Depot DDOU

Table D-1
PERFORMANCE TIMES FOR TRAFFIC TO LA RFCC FROM DDOU

DAY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
4	67	0.8	67	0.8
5	232	2.8	299	3.6
6	378	4.5	677	8.1
7	680	8.2	1357	16.3
8	1041	12.5	2398	28.8
9	1256	15.1	3654	43.9
10	1095	13.2	4749	57.1
11	713	8.6	5462	65.6
12	565	6.8	6027	72.4
13	515	6.2	6542	78.6
14	411	4.9	6953	83.6
15	344	4.1	7297	87.7
16	303	3.6	7600	91.3
17	221	2.7	7821	94.0
18	148	1.8	7969	95.8
19	115	1.4	8084	97.2
20	65	0.8	8149	97.9
21	52	0.6	8201	98.6
22	32	0.4	8233	98.9
23	29	0.3	8262	99.3
24	32	0.4	8294	99.7
> 24	27	0.3	8321	100.0

Table D-2
BANK TIMES FOR TRAFFIC TO LA RFCC FROM DDOU

BANK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	720	8.7	720	8.7
1	2480	29.8	3200	38.5
2	1424	17.1	4624	55.6
3	2585	31.1	7209	86.6
4	688	8.3	7897	94.9
5	127	1.5	8024	96.4
6	102	1.2	8126	97.7
7	102	1.3	8235	99.0
8	76	0.4	8271	99.4
9	29	0.3	8299	99.7
10	14	0.2	8313	100.0
11	8	0.1	8321	100.0

Table D-3

PICK TIMES FOR TRAFFIC TO LA RFCC FROM DDOU

PICK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	201	2.4	201	2.4
1	2765	33.2	2966	35.6
2	1736	20.9	4702	56.5
3	678	8.1	5380	64.7
4	628	7.5	6008	72.2
5	447	5.4	6455	77.6
6	331	4.0	6786	81.6
7	395	4.7	7181	86.3
8	412	5.0	7593	91.3
9	286	3.4	7879	94.7
10	130	1.6	8009	96.3
> 10	312	3.7	8321	100.0

Table D-4

HOLD TIMES FOR TRAFFIC TO LA RFCC FROM DDOU

HOLD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	617	7.4	617	7.4
1	3887	46.7	4504	54.1
2	1690	20.3	6194	74.4
3	690	8.3	6884	82.7
4	918	11.0	7802	93.8
5	365	4.4	8167	98.1
6	103	1.2	8270	99.4
7	26	0.3	8296	99.7
8	12	0.1	8308	99.8
> 8	13	0.2	8321	100.0

Table D-5

TRANSIT TIMES FOR TRAFFIC TO LA RFCC FROM DDOU

TRANSIT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
1	334	4.0	334	4.0
2	2193	26.4	2527	30.4
3	3570	42.9	6097	73.3
4	1077	12.9	7174	86.2
5	673	8.1	7847	94.3
6	308	3.7	8155	98.0
7	21	0.3	8176	98.3
8	75	0.9	8251	99.2
> 8	70	0.8	8321	100.0

APPENDIX E

Handling Times For Freight To Los Angeles RFCC
at Depot DDRV

Table E-1
PERFORMANCE TIMES FOR TRAFFIC TO LA RFCC FROM DDRV

DAY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
8	10	0.6	10	0.6
9	11	0.6	21	1.2
10	40	2.2	61	3.4
11	118	6.6	179	10.0
12	148	8.3	327	18.3
13	203	11.4	530	29.6
<u>14</u>	<u>205</u>	<u>11.5</u>	<u>735</u>	<u>41.1</u>
15	167	9.3	902	50.4
16	130	7.3	1032	57.7
17	183	10.2	1215	68.0
18	102	5.7	1317	73.7
19	174	9.7	1491	83.4
20	111	6.2	1602	89.6
21	80	4.5	1682	94.1
22	43	2.4	1725	96.5
23	16	0.9	1741	97.4
24	14	0.8	1755	98.2
25	13	0.7	1768	98.9
26	9	0.5	1777	99.4
27	5	0.3	1782	99.7
28	6	0.3	1788	100.0

Table E-2
BANK TIMES FOR TRAFFIC TO LA RFCC FROM DDRV

BANK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	20	1.1	20	1.1
1	310	17.3	330	18.5
2	294	16.4	624	34.9
3	320	17.9	944	52.8
4	295	16.5	1239	69.3
5	231	12.9	1470	82.2
6	191	10.7	1661	92.9
7	113	6.3	1774	99.2
> 7	14	0.8	1788	100.0

Table E-3

PICK TIMES FOR TRAFFIC TO LA RFCC FROM DDRV

PICK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	658	36.8	658	36.8
1	555	31.0	1213	67.8
2	240	13.4	1453	81.3
3	154	8.6	1607	89.9
4	64	3.6	1671	93.5
5	34	1.9	1705	95.4
6	15	0.8	1720	96.2
7	9	0.5	1729	96.7
8	32	1.8	1761	98.5
9	5	0.3	1766	98.8
10	6	0.3	1772	99.1
> 10	16	0.9	1788	100.0

Table E-4

HOLD TIMES FOR TRAFFIC TO LA RFCC FROM DDRV

HOLD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	4	0.2	4	0.2
1	180	10.1	184	10.3
2	387	21.6	571	31.9
3	296	16.6	867	48.5
4	102	5.7	969	54.2
5	97	5.4	1066	59.6
6	140	7.8	1206	67.4
7	233	13.0	1439	80.5
8	237	13.3	1676	93.7
9	67	3.7	1743	97.5
> 9	45	2.5	1788	100.0

Table E-5

TRANSIT TIMES FOR TRAFFIC TO LA RFCC FROM DDRV

TRANSIT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
3	2	0.1	2	0.1
4	104	5.8	106	5.9
5	261	14.6	367	20.1
6	623	34.8	990	55.4
7	595	33.3	1585	88.6
8	164	9.2	1749	97.8
> 8	39	2.2	1788	100.0

APPENDIX F

Handling Times For Freight To Los Angeles RFCC
At Depot DDTC

Table F-1
PERFORMANCE TIMES FOR TRAFFIC TO LA RFCC FROM DDTC

DAY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
4	91	1.6	91	1.6
5	153	2.6	244	4.2
6	266	4.6	510	8.8
7	355	6.1	865	14.9
8	456	7.9	1321	22.8
9	543	9.4	1864	32.2
10	539	9.3	2403	41.5
11	562	9.7	2965	51.2
12	644	11.1	3609	62.4
13	622	10.7	4231	73.1
<u>14</u>	<u>470</u>	<u>8.1</u>	<u>4701</u>	<u>81.2</u>
15	345	6.0	5046	87.2
16	266	4.6	5312	91.8
17	145	2.5	5457	94.3
18	119	2.1	5576	96.3
19	60	1.0	5636	97.4
20	55	1.0	5691	98.3
21	43	0.7	5734	99.1
22	31	0.5	5765	99.6
23	12	0.2	5777	99.8
24	6	0.1	5783	99.9
25	3	0.1	5786	100.0
29	2	0.0	5788	100.0

Table F-2
BANK TIMES FOR TRAFFIC TO LA RFCC FROM DDTC

BANK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	57	1.0	57	1.0
1	879	15.2	936	16.2
2	463	8.0	1399	24.2
3	321	5.5	1720	29.7
4	614	10.6	2334	40.3
5	920	15.9	3254	56.2
6	956	16.5	4210	72.7
7	696	12.0	4906	84.8
8	367	6.3	5273	91.1
9	246	4.3	5519	95.4
10	190	3.3	5709	98.6
11	79	1.4	5788	100.0

Table F-3

PICK TIMES FOR TRAFFIC TO LA RFCC FROM DDTG

PICK	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	4198	72.5	4198	72.5
1	1153	19.9	5351	92.4
2	218	3.8	5569	96.2
3	70	1.2	5639	97.4
4	74	1.3	5713	98.7
5	39	0.7	5752	99.4
6	14	0.2	5766	99.6
7	5	0.1	5771	99.7
> 7	17	0.3	5788	100.0

Table F-4

HOLD TIMES FOR TRAFFIC TO LA RFCC FROM DDTG

HOLD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	84	1.5	84	1.5
1	1622	28.0	1706	29.5
2	1259	21.8	2965	51.2
3	819	14.1	3784	65.4
4	852	14.7	4636	80.1
5	354	6.1	4990	86.2
6	327	5.6	5317	91.9
7	182	3.1	5499	95.0
8	70	1.2	5569	96.2
9	51	0.9	5620	97.1
10	28	0.5	5648	97.6
11	55	1.0	5703	98.5
> 11	85	1.5	5788	100.0

Table F-5

TRANSIT TIMES FOR TRAFFIC TO LA RFCC FROM DDTG

TRANSIT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
1	493	8.5	493	8.5
2	2577	44.5	3070	53.0
3	795	13.7	3865	66.8
4	1086	18.8	4951	85.5
5	527	9.1	5478	94.6
6	113	2.0	5591	96.6
7	148	2.6	5739	99.2
> 7	49	0.8	5788	100.0

APPENDIX G

On-Time Performance By Military Service

Table G-1
ON-TIME PERFORMANCE FOR MILITARY SERVICES

BRANCH	NBR TCNS	% ON-TIME (<=21 DAYS)
AIR FORCE	7435	82.8
ARMY	2231	77.8
NAVY	5526	75.0
MARINES	2467	84.6
OTHER	2341	80.4

NOTE "OTHER" INCLUDES: COAST GUARD, CIVILIAN AGENCIES AND OTHER
DEPARTMENT OF DEFENSE ACTIVITIES.

APPENDIX H

On-Time Performance By SPLC

Table H-1
ON-TIME PERFORMANCE BY FOUR-DIGIT SPLC

SPLC	NBR TCNS	% ON-TIME (<=21 DAYS)
7921	1	100.0
7957	329	73.6
7970	327	82.6
7971	945	80.7
7972	510	81.0
7981	810	86.0
7990	3	66.7
7991	1267	82.2
8691	1308	86.5
8795	97	75.3
8801	1853	88.1
8802	1458	83.6
8803	2	50.0
8811	1113	81.4
8821	143	38.5
8830	84	84.5
8832	43	81.4
8835	17	82.4
8836	590	81.7
8837	38	76.3
8841	765	81.6

Table H-1
ON-TIME PERFORMANCE BY FOUR-DIGIT SPLC

SPLC	NBR TCNS	% ON-TIME (<=21 DAYS)
8851	362	76.0
8865	853	81.1
8871	874	81.6
8881	1	100.0
8890	2035	73.5
8895	2013	71.8
8896	794	77.6

Table H-2
STANDARD POINT LOCATION CODES (STATE & COUNTY)
FOR THE LOS ANGELES RFCC REGION

SPLC CODE	STATE	COUNTY
7901	AZ	APACHE
7911	AZ	NAVAJO
7921	AZ	COCONINO
7931	AZ	MOHAVE
7941	AZ	YAVAPAI
7942	AZ	YAVAPAI
7951	AZ	GREENLEE
7953	AZ	GRAHAM
7957	AZ	COCHISE
7961	AZ	GILA
7965	AZ	PINAL
7970	AZ	MARICOPA
7971	AZ	MARICOPA
7972	AZ	MARICOPA
7979	AZ	LA PAZ
7981	AZ	YUMA
7990	AZ	PIMA
7991	AZ	PIMA
7998	AZ	SANTA CRUZ

Table H-2

STANDARD POINT LOCATION CODES (STATE & COUNTY)
FOR THE LOS ANGELES RFCC REGION

SPLC CODE	STATE	COUNTY
8691	NV	CLARK
8771	CA	INYO
8775	CA	TULARE
8776	CA	TULARE
8795	CA	YINGS
8801	CA	SAN BERNARDINO
8802	CA	SAN BERNARDINO
8803	CA	SAN BERNARDINO
8811	CA	KERN
8812	CA	KERN
8815	CA	KERN
8821	CA	SAN L OBISPO
8330	CA	LOS ANGELES
8831	CA	LOS ANGELES
8832	CA	LOS ANGELES
8835	CA	LOS ANGELES
8836	CA	LOS ANGELES
8837	CA	LOS ANGELES
8841	CA	VENTURA
8842	CA	VENTURA
8847	CA	VENTURA
8851	CA	SANTA BARBARA
8861	CA	RIVERSIDE
8865	CA	RIVERSIDE
8866	CA	RIVERSIDE
8871	CA	ORANGE
8872	CA	ORANGE
8881	CA	IMPERIAL
8882	CA	IMPERIAL
8890	CA	SAN DIEGO
8895	CA	SAN DIEGO
8896	CA	SAN DIEGO

REPORT DOCUMENTATION PAGE

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13. ABSTRACT (Maximum 200 words) The On-time Performance of Shipments through the Los Angeles Regional Freight Consolidation Center Study is an analysis of service to customers after implementation of the Regional Freight Consolidation Program. The Los Angeles Regional Freight Consolidation Center (RFCC) is one freight pooling hub in the Regional Freight Consolidation Program, formerly known as the Enhanced DLA Distribution System. Results show that the Uniform Military Materials Issue Priority System (UMMIPS) standard of 95 percent on-time delivery (i.e. within 21 days) is not being met. Customers are receiving only 80 percent of their freight on time. The policy of the RFCC Program Office is: depots have a maximum of 7 days for pooling and delivery to the customer. The six primary DLA depots are not delivering 95 percent of their shipments to the RFCC within 14 days. However, the RFCC is delivering 98.9 percent of its pooled shipments to the customer within 7 days. It was recommended that the depots make additional efforts to reduce handling times for shipments to the Los Angeles RFCC if the UMMIPS service standard of 95 percent delivery with 21 days is to be satisfied.			
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